

Work Order ID 121489-2

Thursday, June 26, 2014 3:01:20 PM

\*121489\*

Page 1

Item ID: D2893-1

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Support

Start Date: 6/26/14 Start Qty: 10.00

\*10\*  
\*10\* 2

Cust Item ID:

Required Date: 6/26/14 Req'd Qty: 10.00

Customer:

Reference:

Approvals: Process Plan: MLJDate: 14-06-27

Tooling:

Date:

Run Start \*NR1\*

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2893	C								
100	HAAS CNC VERTICAL MACHINING #1	0.00							DAS 08 9-89
*100*									
HAAS 1	Memo	0.00							
HAAS CNC vertical machine #1	1-Machine as per Folio FA081 2-Deburr								
110	QC2- Inspect parts off machine FAI/FAIB	0.00							DAS 08 9-89
*110*									
QC	Memo	0.00							
Quality Control									
120	QC8- Inspect parts - second check	0.00							DAS 37 9-89
*120*									
QC	Memo	0.00							
Quality Control									

PTO  
(last page)

14-08-11

# Work Order ID 121489

Thursday, June 26, 2014 3:01:20 PM

**\*121489\***

Page 2

Item ID: D2893-1

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Support

Start Date: 6/26/14 Start Qty: 10.00

**\*10\***

Cust Item ID:

Required Date: 6/26/14 Req'd Qty: 10.00

**\*10\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

0.00

**\*130\***

HandFXtube

Memo

0.00

Hand Finishing Crosstubes

Per note 8 on page 1 of dwg D2893, Prep inner concave surface of support and apply 3M Scotch-Weld as per dwg. 24h of cure time.

*miz8 292*

*2*

*CR 14-08-13*

140

QC3- Inspect Part Finish

0.00

**\*140\***

QC

Memo

0.00

Quality Control

*2*

*x*

*Ⓟ*

*14/08/13*

170

Identify as per dwg & Stock Location: LG051 0.00

**\*170\***

Packaging

Memo

0.00

Packaging

*2x*

DAS  
28  
9-89

AUG 13 2014

Thursday, June 26, 2014 3:01:20 PM

Page 3

MLJ 14-08-15



<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 121489
<b>Description:</b> Ø2.750 Support		<b>Part Number:</b> D2893-1
<b>Inspection Dwg:</b> D2893	<b>Rev:</b> C	<b>Page 1 of 1</b>

### FIRST ARTICLE INSPECTION DIMENSION SHEET

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	5
HAAS Section								
AA	2.985	3.005		2.995	2.995	2.997	2.999	2.996
AB	0.440	0.460		0.440	0.440	0.440	0.440	0.440
AC	0.125	0.160		0.130	0.130	0.130	0.130	0.130
AD	0.040	0.060		0.050	0.050	0.050	0.050	0.050
AE	0.188	0.193		0.188	0.188	0.188	0.188	0.188
AF	0.125	0.160		0.135	0.135	0.135	0.135	0.135
AG	0.140	0.160		0.147	0.146	0.147	0.147	0.148
AH	1.360	1.400		1.375	1.378	1.379	1.378	1.378
AI	0.040	0.060		0.052	0.050	0.047	0.051	0.048
AJ	1.190	1.230		1.219	1.219	1.216	1.219	1.217
AK	0.010	0.020		0.010	0.010	0.010	0.010	0.010
AL	0.053	0.073		0.063	0.063	0.063	0.063	0.063
AM	0.240	0.260		0.250	0.250	0.250	0.250	0.250
AN	2.518	2.538		2.528	2.528	2.528	2.528	2.528
AO	84.39	90.39		87.39	87.39	87.39	87.39	87.39
AP	0.261	0.266		0.261	0.261	0.261	0.261	0.261
AQ	0.053	0.073		0.032	0.032	0.063	0.063	0.063
AR								
AS								
AT								
Accept/Reject								

( Split 1 )

<b>Measured by:</b> H	<b>DAS</b> 08 9-89	<b>Date:</b> 14/08/09
<b>Audited by:</b> DAS 37 9-89		<b>Date:</b> 14.08.11
<b>Preliminary Approval:</b>		<b>Date:</b>

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	
B	07.05.08	Dimension AP revised	KJ/JLM	
C	08.04.21	Reformat	KJ/JLM	
D	12.07.31	Dwg Rev updated	KJ	



<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	121489
<b>Description: Ø2.750 Support</b>		<b>Part Number:</b>	D2893-1
<b>Inspection Dwg: D2893</b>	<b>Rev: C</b>	<b>Page 1 of 1</b>	

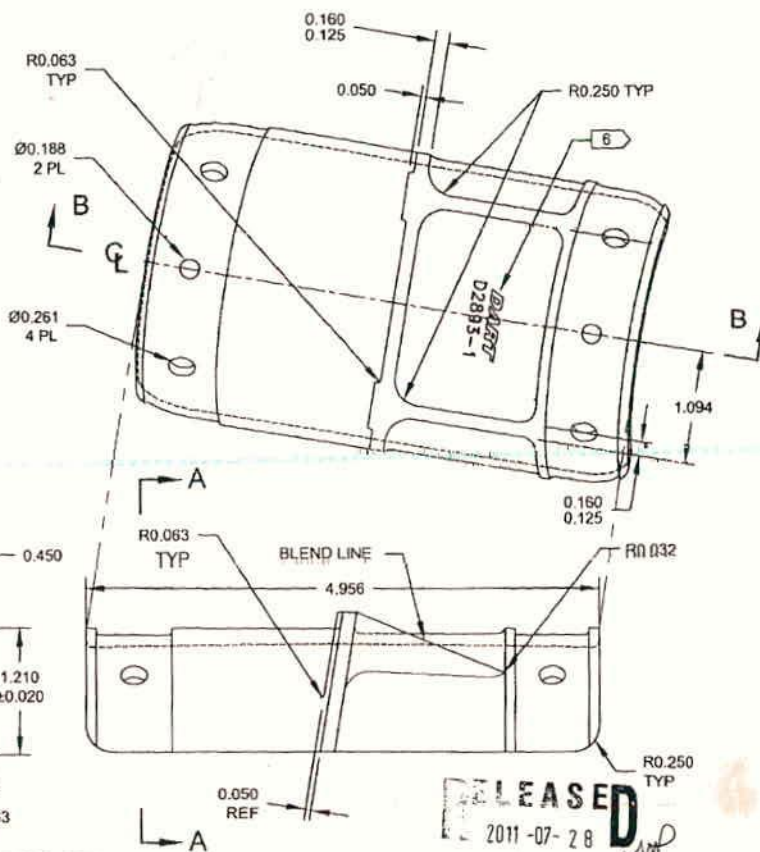
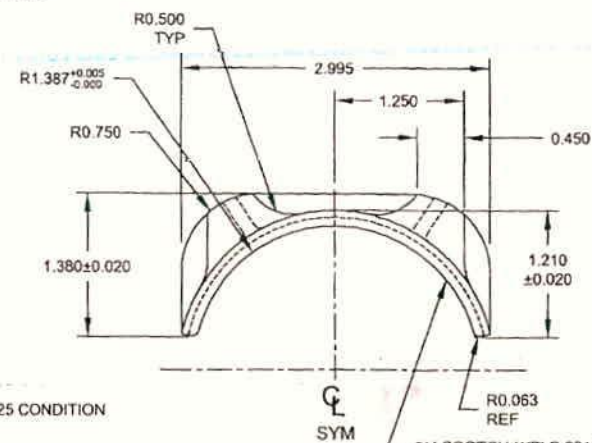
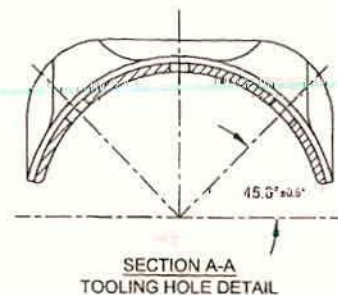
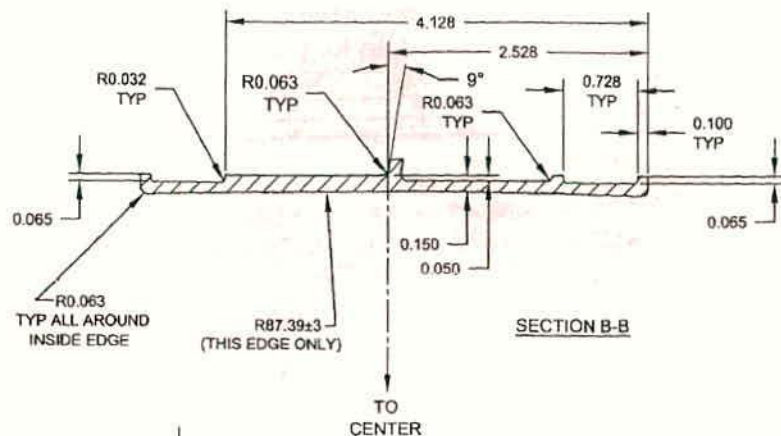
### FIRST ARTICLE INSPECTION DIMENSION SHEET

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	16	17	18	19	20
HAAS Section								
AA	2.985	3.005		2.996	2.995	2.995	2.996	2.997
AB	0.440	0.460		0.440	0.440	0.440	0.440	0.440
AC	0.125	0.160		0.130	0.130	0.130	0.130	0.130
AD	0.040	0.060		0.050	0.050	0.050	0.050	0.050
AE	0.188	0.193		0.188	0.188	0.188	0.188	0.188
AF	0.125	0.160		0.135	0.135	0.135	0.135	0.135
AG	0.140	0.160		0.148	0.147	0.147	0.148	0.148
AH	1.360	1.400		1.376	1.376	1.376	1.377	1.378
AI	0.040	0.060		0.050	0.053	0.050	0.048	0.049
AJ	1.190	1.230		1.218	1.220	1.216	1.216	1.218
AK	0.010	0.020		0.010	0.010	0.010	0.010	0.010
AL	0.053	0.073		0.063	0.063	0.063	0.063	0.063
AM	0.240	0.260		0.250	0.250	0.250	0.250	0.250
AN	2.518	2.538		2.528	2.528	2.528	2.528	2.528
AO	84.39	90.39		87.39	87.39	87.39	87.39	87.39
AP	0.261	0.266		0.261	0.261	0.261	0.261	0.261
AQ	0.053	0.073		0.063	0.063	0.063	0.063	0.063
AR								
AS								
AT								
Accept/Reject				(		SPLIT		)

<b>Measured by:</b>	Bo	<b>DAS</b>	08	<b>Date:</b>	14/08/09
<b>Audited by:</b>		<b>9-39</b>		<b>Date:</b>	
<b>Preliminary Approval:</b>				<b>Date:</b>	

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	
B	07.05.08	Dimension AP revised	KJ/JLM	
C	08.04.21	Reformat	KJ/JLM	
D	12.07.31	Dwg Rev updated	KJ	





# NOTES:

- 1) MATERIAL: 17-4 PH STAINLESS STEEL, H900 OR H925 CONDITION  
MIN UTS = 170 KSI (38 HRC)  
(REF DART SPEC. D6104)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 (REF X.XXX = ±0.010) UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: DART LOGO (PER DART SUPPLIED GRAPHIC) AND PART NUMBER IN THIS AREA WITH 0.125 HIGH LETTERING  
0.010-0.020 DEEP, PER DART QSI 044 6.3.
- 7) WEIGHT: 0.78 lb
- 8) FOR THE ENTIRE INNER CONCAVE SURFACE:  
ABRADE SURFACE WITH 400-GRIT SANDPAPER. REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY 0.03\"/>

D2893-1 SUPPORT

SHOP COPY  
RETURN TO  
ENGINEERING

UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER

121489 MLS  
14-06-27

RELEASED  
2011-07-28

REV.	DESCRIPTION	BY	DATE
C	RMV FINISH, ADD 3M 2216, ADD H925 MAT'L OPTION	CP	11.07.15
B	UPDATE DIMS AS MFG, PRIME INSIDE	PH	07.03.16
A	NEW ISSUE	CP	01.01.10
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	11.07.15		

DART AEROSPACE LTD  
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D2893  
TITLE Ø2.750 SUPPORT  
REV. C  
SHEET 1 OF 1  
SCALE NTS  
COPYRIGHT © 2001 BY DART AEROSPACE LTD  
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR DISSEMINATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.



DQA:

Date: 14/08/27



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: 14/8/27

Work Order update only ☐

Work Order: <u>D2893-1</u>	<b>DISPOSITION</b> Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input checked="" type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>			
Part No. <u>121489</u>		Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>
NCR No. <u>14-4191</u>		Machining <input checked="" type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>
		Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>
		Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator	14/08/03	100	2	D1 blank make 2 parts D.063" rad in center pocket where the engraving is located 15.032" on 2 parts and the 2 side pockets as well as 0.02" on the 2 parts RC: Wrong cutter has been mounted on setup buggy / was not Recut	DAS 12 8-89  14/9/11	Acceptable  No effect on strength or fit	DAS 12 8-89  14/6/11	DAS 16 9-89  14/6/11	DAS 16 9-89  14/6/11
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

## FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input checked="" type="checkbox"/> Other <u>tooling was not Recut</u>	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled
--	--	---	---	--